WHAT WE CLAIM IS:

1. A door apparatus for a vehicle comprising:

a door being movable in an opening direction for uncovering an opening portion defined in a vehicle body and in a closing direction for covering the opening portion;

a moving means assembled between the vehicle body and the door; and

a driving means for driving the door to be moved, the driving means further detecting a moving speed of the door and controlling the detected moving speed of the door;

the moving means including:

a predetermined moving stroke in the opening direction; and

a decelerating area defined within the predetermined moving stroke for decelerating the moving speed of the door,

wherein the door is moved in the opening direction at a first speed by use of the moving means and the driving means until the door reaches the decelerating area, the moving speed of the door in the opening direction is decelerated by the driving means from the first speed to a second speed being lower than the first speed while the door has been moved in the decelerating area, and the movement of the door is stopped by the driving means when the door is moved beyond the decelerating area, the door comes in contact with an obstacle, and the moving speed of the door in the opening direction detected by the diving means becomes lower than a predetermined speed corresponding to an open position of the door by a predetermined threshold value.

2. A door apparatus for a vehicle according to claim 1, wherein the driving means includes a driving motor assembled to the door and a rotation detecting mechanism for detecting a rotational speed of the driving motor.

3. A door apparatus for a vehicle according to claim 2, wherein the predetermined threshold value is set to be greater than a fluctuation amount of the rotational speed of the driving motor, the fluctuation is caused at each open position when the door is positioned at the each open position.

4. A door apparatus for a vehicle according to claim1, wherein the obstacle includes at least either an entirely opening stopper for specifying the open position of the door or an intermediate stopper for preventing a window member

from being left open when the door is moved in the opening direction.

5. A door apparatus for a vehicle according to claim 2, wherein the obstacle includes at least either an entirely opening stopper for specifying the open position of the door or an intermediate stopper for preventing a window member from being left open when the door is moved in the opening direction.

6. A door apparatus for a vehicle according to claim 3, wherein the obstacle includes at least either an entirely opening stopper for specifying the open position of the door or an intermediate stopper for preventing a window member from being left open when the door is moved in the opening direction.

7. A door apparatus for a vehicle according to claim 6, wherein the entirely opening stopper is provided for the vehicle body and comes in contact with the door when the door is positioned at an entirely open position, the entirely opening position corresponds to a position for uncovering the opening portion defined in the vehicle body, the intermediate stopper is provided for the vehicle body and takes various postures relative to the door in response to an opening amount of the window member, and the intermediate stopper comes in contact with the door when the door is moved in the opening direction with the window member being left open with a predetermined opening amount.

8. A door apparatus for a vehicle according to claim 7, wherein the intermediate stopper is pivotably rotated relative to the door corresponding to the opening amount of the window member and is restricted from being pivotably rotated relative to the door over a predetermined projecting amount relative to the door.

9. A door apparatus for a vehicle according to claim 3, wherein the door comes in contact with the obstacle being entrapped between the door and the vehicle body and the movement of the door is stopped when the moving speed of the door becomes lower than the predetermined speed by the predetermined threshold value.

10. A door apparatus for a vehicle according to claim 1, further comprising:
the moving means including:

a guide rail provided for the vehicle body and extending in a vehicle longitudinal direction, and

the driving means including:

a driving motor assembled to the door;

an output drum assembled to the door for transmitting a rotation of the driving motor;

a pulley mechanism; and

a cable wound by the pulley mechanism, and one end of the cable fixed at a one end portion in the vehicle longitudinal direction of the guide rail.

11. A door apparatus for a vehicle comprising:

a door being movable in an opening direction for uncovering an opening portion defined in a vehicle body and in a closing direction for covering the opening portion;

a moving means assembled between the vehicle body and the door; and

a driving means for driving the door to be moved, the driving means further detecting a moving speed of the door and controlling the detected moving speed of the door;

the moving means including:

a predetermined moving stroke in the opening direction; and

a decelerating area defined within the predetermined moving stroke for decelerating the moving speed of the door,

wherein the door is moved in the opening direction at a first speed by use of the moving means and the driving means until the door reaches the decelerating area, the moving speed of the door in the opening direction is decelerated by the driving means from the first speed to a second speed being lower than the first speed while the door has been slidably moved in the decelerating area, and the movement of the door is stopped by the driving means when the door is moved beyond the decelerating area, the vehicle body comes in contact with an obstacle, and the moving speed of the door in the opening direction detected by the diving means becomes lower than a predetermined speed corresponding to an open position of the door by a predetermined threshold value.

12. A door apparatus for a vehicle according to claim 11, wherein the driving means includes a driving motor assembled to the door and a rotation detecting mechanism for detecting a rotational speed of the driving motor.

13. A door apparatus for a vehicle according to claim 12, wherein the predetermined threshold value is set to be greater than a fluctuation amount of the rotational speed of the driving motor, the fluctuation is caused at each open position when the door is positioned at the each open position.

14. A door apparatus for a vehicle according to claim 11, wherein the door is provided with at least either an entirely opening stopper or an intermediate stopper as the obstacle, the entirely opening stopper specifies the open position of the door, and the intermediate stopper prevents a window member from being left open when the door is moved in the opening direction.

15. A door apparatus for a vehicle according to claim 12, wherein the door is provided with at least either an entirely opening stopper or an intermediate stopper as the obstacle, the entirely opening stopper specifies the open position of the door, and the intermediate stopper prevents a window member from being left open when the door is moved in the opening direction.

16. A door apparatus for a vehicle according to claim 13, wherein the door is provided with at least either an entirely opening stopper or an intermediate stopper as the obstacle, the entirely opening stopper specifies the open position of the door, and the intermediate stopper prevents a window member from being left open when the door is moved in the opening direction.

17. A door apparatus for a vehicle according to claim 14, wherein the entirely opening stopper is provided for the door and comes in contact with the vehicle body when the door is positioned at an entirely open position, the entirely opening position corresponds to a position for uncovering the opening portion defined in the vehicle body, the intermediate stopper is provided for the door and takes various postures relative to the vehicle body in response to an opening amount of the window member, and the intermediate stopper comes in contact with the vehicle body when the door is moved in the opening direction with the window member being left open with a predetermined opening amount.

18. A door apparatus for a vehicle according to claim 17, wherein the intermediate stopper is pivotably rotated relative to the vehicle body

corresponding to the opening amount of the window member and is restricted from being pivotably rotated relative to the vehicle body over a predetermined projecting amount relative to the vehicle body.

19. A door apparatus for a vehicle according to claim 11, further comprising:
the moving means including:
  a guide rail provided for the vehicle body and extending in a vehicle longitudinal direction, and
the driving means including:
  a driving motor assembled to the door;
  an output drum assembled to the slide door for transmitting a rotation of the driving motor;
  a pulley mechanism; and
a cable wound by the pulley mechanism, and one end of the cable fixed at a one end portion in the vehicle longitudinal direction of the guide rail.

20. A method for controlling a moving speed of a door in an opening direction for uncovering an opening portion defined in a vehicle body and in a closing direction for covering the opening portion comprising the steps of:
turning on a switch for slidably moving the door in the opening direction;
driving a driving means for driving the door to be moved in the opening direction;
determining whether or not the door being moved in the opening direction by the
  driving means is positioned in a decelerating area or beyond the decelerating area;
determining whether or not the door is in contact with the vehicle body when the
  door is positioned in the decelerating area or beyond the decelerating area; and
controlling the moving speed of the door to be a first predetermined speed being
  lower than a second predetermined speed before the door comes in contact with the vehicle body.

21. A method for controlling the moving speed of the door in the opening direction according to claim 20, further comprising the steps of:
stopping driving the driving means when the door comes in contact with the vehicle body, wherein the movement of the door in the opening direction is stopped.

22. A method for controlling the moving speed of the door in the opening direction according to claim 21, wherein the vehicle body is provided with at least either an entirely opening stopper or an Intermediate stopper, the entirely opening stopper comes in contact with the door when the slide door is positioned at an entirely open position for uncovering the opening portion defined in the vehicle body, the intermediate stopper takes various postures relative to the door in response to an opening amount of an window member, and comes in contact with the door when the door is moved in the opening direction with the window member being left open with a predetermined opening amount.

23. A method for controlling the moving speed of the door in the opening direction according to claim 21, wherein the door is provided with at least either an entirely opening stopper or an intermediate stopper, the entirely opening stopper comes in contact with the vehicle body when the door is positioned at an entirely open position for uncovering the opening portion defined in the vehicle body, the intermediate stopper takes various postures relative to the door in response to an opening amount of the window member, and comes in contact with the door when the door is moved in the in the opening direction with the window member being left open with a predetermined opening amount.

24. A method for controlling the moving speed of the door in the opening direction according to claim 20, wherein the door comes in contact with the vehicle body via an obstacle being entrapped between the door and the vehicle body when the door is positioned in the decelerating area or beyond the decelerating area, wherein the moving speed of the door is controlled to be the first predetermined speed.

25. A method for controlling the moving speed of the door in the opening direction according to claim 20, wherein the first predetermined speed corresponds to the moving speed of the door which is sufficiently low for preventing an unexpected contact of the door with the vehicle body.

26. A method for controlling the moving speed of the door in the opening direction according to claim 20, further comprising the steps of:
determining whether or not an obstacle is being entrapped between the door and

the vehicle body when the door is positioned ahead of the decelerating area; and

controlling the moving speed of the door to be the second predetermined speed when the obstacle is not being entrapped between the door and the vehicle body.

27. A method for controlling the moving speed of the door in the opening direction according to claim 26, further comprising the steps of:

controlling the door to be moved in the closing direction for covering the opening portion defined in the vehicle body when the obstacle is being entrapped between the door and the vehicle body.